

ABSTRACT

A process for refining a raw copper material containing a copper sulfide mineral, e.g., chalcopyrite, by the hydrometallurgical process which can leach copper out of the raw material at a high extraction while suppressing oxidation of sulfur, recover it in the monovalent state by electrolysis and, at the same time, recover a concomitant valuable metal while minimizing production of wastes, e.g., leaching residue, as far as possible. The process for refining a raw copper material containing a copper sulfide mineral, comprising a chlorine-aided leaching step for leaching the raw copper material in the presence of chlorine to produce the leaching product liquor containing the copper ion, copper ion reduction step for reducing the leaching product liquor in the presence of a reductant to produce the reduction product liquor containing the cuprous ion, solvent extraction step for treating the reduction product liquor to produce the stripping product liquor containing the copper and raffinate, copper electrowinning step for electrolyzing the stripping product liquor to produce the electrolytic copper, solution purification step for treating the raffinate to produce the purified solution and iron recovery step for treating the purified solution to recover the iron-containing solid therefrom.

Representative Drawing

No